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EXAMINER	
MONDT, JOHANNES P	

ART UNIT	PAPER NUMBER
3663	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/507,323	LABERGE, MICHEL	
	Examiner	Art Unit	
	Johannes P. Mondt	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *58-87* is/are pending in the application.

4a) Of the above claim(s) *67,68 and 75-86* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *58-66,69-74 and 87* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *(2x)*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of the Restriction and Election-of-Species Requirement mailed 6/6/06 in the reply filed on 8/2/06 is acknowledged. The traversal is on the following grounds:

(a) With regard to the Restriction requirement and based on MPEP 1893.03(d) applicant alleges that the underlined portions in Response form a single inventive concept. This is not found persuasive because the office action mailed 6/6/06 provides arguments that said concept is not inventive through the showing of prior art in the form of Browne, Flynn, or Lo as cited.

Applicant is reminded that, according to MPEP 1893.03(d), the expression "special technical features" is defined as meaning those technical features that define the contribution which each claimed invention, considered as a whole, makes over the prior art".

Applicant does not comment on the specific showing and therefore applicant's argument in traverse of the Restriction Requirement is not persuasive.

(b) With regard to the Election-of-Species requirement applicant alleges failure to give a valid reason for said Election-of-Species requirement, but only buttresses said allegation by stating not to understand the reason provided in the office action for considering said species to be independent or distinct. To clarify, based on the specification at least as originally disclosed fusionable material is either (1) merely surrounded by gaseous matter inside the liquid, and hence is located within the liquid,

said liquid being penetrable to said fusionable material, or (2) materially separated by a micro-balloon from said liquid. See paragraph [0061] of the PCT filing and also original claims 37 and 41. Applicant has not traversed the specific argument on the specific reason included in the office action. Furthermore, that a reasonable number of dependent claims is permitted to be presented lacks the specific showing that 18 claims is an unreasonably low number.

Therefore, the Restriction/Election-of-Species requirement is still deemed proper and is therefore made FINAL.

Applicant indicated that claims 58-66, 69-74 and 87 read on the elected species. Therefore, claims 67, 68 and 75-86 are being withdrawn from consideration.

Information Disclosure Statement

The examiner has considered the items listed in the Information Disclosure Statements filed 9/10/04 and 4/8/05. Signed copies of Forms PTO-1449 are enclosed with this office action.

Specification

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e., failing to provide an enabling disclosure.

There is no reputable evidence of record to support any allegations or claims that the invention is capable of operating as indicated in the specification, i.e., allegations or claims of fusionable material target apparatus for use in a fusion reactor are without support either within the specification or through reference and/or knowledge of those of ordinary skills in the art.

The invention is directed to a method for initiating nuclear fusion by a directing an acoustic pulse in a vessel filled with liquid containing fusionable material. Nuclear fusion reactions are allegedly caused by the formation of said acoustic wave in a bubble with fusionable material in said liquid. Under the described conditions formation and collapse of acoustic energy bubbles, a phenomenon commonly known as "sonoluminescence", "sonofusion", "acoustic inertial confinement fusion", or "sonochemistry", is expected. In all these cases the free energy allegedly driving the conditions for onset of nuclear fusion reactions resides in a pressure wave launched into the fusionable material. For this reason in the sequel no distinction is made between the various terms indicated above during the discussion of the objection to the specification, although the prior art discussion is taken at face value of its specific claim language.

Sonoluminescence was discovered in the early 1930's in Germany in efforts to speed up the process of photography development. It was noted that by vibrating the photo development fluid at frequencies higher than the human ear could observe a faint glow was emitted. Upon further inspection of the film plates showed spots on the development plates caused by light generated as a result of the induced frequency in the development fluid. See Wilson, "Hot Sounds", Popular Mechanics", 2/1998.

It was not until the early 1980's that sonoluminescence again surfaced in the scientific community. For instance, Seth Putterman and William C. Moss have made their reasoned statement that the light generated during sonoluminescence is in the ultraviolet portion of the light spectrum. However, a photon energy level of about 6 eV as characteristic for ultraviolet light (N.B.: $E = h \nu$) is extremely far below the level of at least about 3×10^7 K which is the critical temperature for the fusion reaction with the highest cross section, i.e., the easiest reaction to be sustained, and once reached one would expect to see overwhelming evidence of it in terms of nuclear reaction products such as alpha particles and neutrons in the several MeV range (see, e.g., J. D. Lawson, "Some Criteria for a Power Producing Thermonuclear Reactor", Proc. Phys. Soc. B70 (1957), 6-10); and see L. A. Artsimovich, "Controlled Thermonuclear Reactions", Gordon & Breach Science Publishers, New York 1964, in particular, pages 1-3).

Not surprisingly, then, the allegation or claim of nuclear reactions and associated reaction products is questioned: see Browne, The New York Times, 12/1994 and "Star in a Jar", Popular Science, 12/1998.

Other doubts raised by the scientific community on the generation of nuclear fusion through pressure waves, also referred to as "sonofusion", "acoustic inertial confinement", "sonoluminescence" etc., are listed below:

L. Crum, "Sonoluminescence and Acoustic Inertial Confinement Fusion", "Fifth International Symposium on Cavitation", Osaka, Japan, November 1-4, 2003, in line with the above estimates on the energetic distance between ultraviolet and fusion ranges, reports that:

- while the temperature required for significant D-D fusion is in the order of 100 million degrees centigrade, temperature during sonoluminescence do not exceed a few tens of thousands of degrees (cf. page 1, col. 2, 2nd par.);
- S. Putterman, a proponent of acoustic inertial confinement research, reports on unsuccessful attempts to detect coincidence of neutron emission with sonoluminescence;
- K. Suslick, University of Illinois, noted that atomic and molecular dissociation and ionization required so much energy that several liquids were unsuitable for generating acoustic inertial confinement, and further noted that the role of vapor in preventing fusion plasma heating must be carefully considered;
- Sample, "The Guardian", March 2004, reports in the article "Science runs into trouble with bubbles" that reviewers of Taleyarkhan's article dismissed the claim of tritium production on the ground that his laboratory was probably contaminated by tritium;
- G. Pusch (http://www/physics-talk.com/Why-is-acetone-used-in-sonofusion-experiments-6987552.htlm) criticizes the computer model used by Taleyarkhan of the bubble implosion arguing the model neglects physical limitations imposed by molecular degrees of freedom, and states that the finding of tritium may well be due to neutron capture by deuterium because of degassing by acoustic cavitation under neutron bombardment for approximately 2 hours prior to experimental runs.

- Brenner et al, in a recent extensive review of sonoluminescence entitled "Single-bubble sonoluminescence", Reviews of Modern Physics Volume 74, issue 2, pages 425-484 (2002), conclude that the temperature in the single bubble is at least as high as in multiple bubble sonoluminescence but is at most only slightly above 20,000 K (see page 450, right column), and specifically points out that the earlier estimates of up to 10^8 K obtained by computer simulations were fare too high (see pages 427-428) and has been continually downgraded during a decade of further research following initial excitement.

It is noted that the temperature concluded by Brenner is between three and four decades too small for thermonuclear fusion. Said temperature is an average temperature over the bubble region upon collapse (loc.cit.). However, for temperatures comparable to those needed for D-D or even D-T fusion (about 36,000,000 K and 100,000,000 K, respectively) any spatial maximum in the temperature remotely relevant to fusion reactor conditions must necessarily be much less than 0.05% of the bubble volume in order not to force said average to be higher than it is. While applicant does not quantify bubble volume, radius, time, temperature upon collapse, according to measurements the bubble as a whole upon collapse is at best several μm (see, e.,g., Brenner et al, loc.cit., page 439, right column, Figure 21 and its discussion) in radius. Applicant also does not quantify peak temperature and its spatial extent upon collapse. However, in view of the foregoing considerations a peak temperature relevant for thermonuclear fusion can, if at all, exist only in a volume with radius considerably less than 300 nm, while the collapsed

state only lasts only for a time of the order of 1 μs (Brenner et al, loc.cit., Figure 21 and discussion thereof). Therefore, equilibration within said volume is by no means established. But equilibration is presumed in the critical temperatures for thermonuclear fusion, because only the particles in the tail of the, - by virtue of equilibration: exponential, velocity distribution function contribute significantly to thermonuclear fusion (see, e.g., L.A. Artsimovich, loc.cit., pages 3-4). Therefore, even a comparison with the temperature requirements for thermonuclear fusion that pertain to, for instance, magnetic fusion is unjustifiably optimistic about bubble fusion. The specification does not comment in the slightest on these problems that cast serious doubt about the achievability of fusion reactor conditions with the claimed method.

The examiner further notes that the conclusions made in the article by Taleyarkhan et al (IDS) appear to be based on the assumption that "background" may be defined by selecting as control fluid a fluid identical to the deuterated acetone except that deuterium is replaced by hydrogen (page 1868, second column). In view of the natural processes that can give rise to neutron production from deuterium this selection of the control fluid itself is questionable.

In light of the above, applicant's invention is considered to be a mere variation of the "cold fusion" concept by Fleischmann and Pons (see the 3/24/89 article by D. Braaten), and that the nuclear reactor in which the claimed apparatus is to be used is still no more than an unproven concept.

Nothing in the applicant's specification addresses the above-noted enormous discrepancy between the energy ranges of quanta measured in acoustic wave inertial confinement (ultraviolet range) and that of the quanta of orders of magnitude higher in energy that must exist in the presence of nuclear fusion reactions. At the very least data should have been presented together with an analysis complete with error analysis to support the stated application in a nuclear fusion reactor by demonstrating its nuclear fusion reactor capability, i.e., the incorporation of the claimed apparatus in a reactor producing net energy through fusion reactions. Additionally, from an *a priori* point of view nothing points to the possibility of overcoming the Coulomb barrier in a statistically significant way by acoustic quanta so much lower in energy. Conventional quantum mechanics shows an exponentially small transmission coefficient T for a nucleus hitting another nucleus head-on (even far worse for other collisions) (see for instance D. Bohm, "Quantum Theory", Dover Edition, 1989, pages 277-281): Velocities v of the order derived from maximal velocities during pressure waves yield truly miniscule values for T, as would be clear from adapting problem 6 in Bohm to the case of any of the nuclear fusion reactions contemplated by applicant.

Applicant, in his specification neither contains experimental, nor theoretical cross section data, let alone statistically evaluated data, which, considering the wholly unaccepted state of acoustic ICF, is needed for the claims to be supported by the specification.

Nor has applicant, in his disclosure provided evidence to indicate applicant has succeeded in achieving acoustic ICF where others have failed, in arriving at an

operative system producing nuclear reactions through acoustic ICF, i.e., has progressed his system beyond unproven speculation of concept, and hence his invention still requires an undue amount of experimentation to enable one skilled in the art to make and use the invention for its indicated purpose.

Therefore, the specification falls short of providing a written description of the invention, considering the clear intent of forming the means for a fusion reactor; while said specification also fails to provide enablement for the method as claimed for the following reasons:

(A) Specifically, with regard to the breadth of the claims, neither frequency nor amplitude of the acoustic wave are quantified let alone shown to be in a regime wherein fusion reactions can be induced within the context of the disclosed utility, i.e., a fusion reactor.

(B) With regard to the nature of the invention, if reduced to practice the invention would indeed be the fulfillment of the goal of intensive, world-wide research over more than half a century; to require documentation in terms of experimental data on the fusion yield in comparison with the energy required to produce said fusion yield is a modest request in light of said fulfillment.

(C) The state of the prior art falls dramatically short of said fulfillment as witnessed by the reference cited under the objection to the specification included above.

(D) With regard to the required level of ordinary skill to practice the claimed method in a fusion reactor as disclosed, said level is clearly inadequate considering that those skilled in the art know that the temperature required to achieve thermonuclear fusion

based on any of the reactions cited in the specification (see par. [0004]) is about four decades (factor 10,000) higher than the upper limit of the estimate obtained after a thorough review (cf. Brenner et al).

(E) With regard to the predictability level in the art, research of sonoluminescence has progressed to the point of consensus in eliminating the high bubble temperatures previously quoted based on computer simulations, while predictability in the art of fusion is adequate to outrule a fusion reactor based on temperatures of the order of 10,000 times lower than what is required for thermonuclear fusion.

(F) The amount of direction provided by the inventor is, especially in light of points (D) and (E) nearly zero: no explanation is included that may help any practitioner of the invention to bridge the gap between the temperature limit of sonoluminescence and the temperature required for thermonuclear fusion.

(G) No working examples, from which the predicted result may be obtained through detailed example, are included in the specification.

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure can be estimated as being at least equal to the worldwide effort on nuclear fusion research, because there are no indications sonoluminescence can reach the temperature thresholds for ignition (see reference to Artsimovich above).

In conclusion, undue experimentation to practice the invention is most readily concluded. In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

For the same reasons it can be concluded that the invention lacks credible utility and well-established utility, i.e., the achievement of a nuclear fusion reactor based on the method of applicant as disclosed is neither credible nor well established in view of the above considerations..

In conclusion, the examiner has set forth a reasonable and sufficient basis for challenging the adequacy of the disclosure. The statute requires the applicant himself to inform, not to direct others to find out for themselves; In re Gardner et al, 166 U.S.P.Q. 138; In re Scarborough, 182 U.S.P.Q. 298. Note that the disclosure must enable a person skilled in the art to practice the invention without having to design structure not shown to be readily available in the art; In re Hirsch, 131 U.S.P.Q. 198.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. ***Claims 58-66, 69-74 and 87*** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The reasons for this rejection are the same as the reason set forth under the objection to the specification for lack of a written description, said reasons herewith being included by reference.

3. ***Claims 58-66, 69-74 and 87*** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The reasons for this rejection are the same as the reason set forth under the objection to the specification for lack of enablement, said reasons herewith being included by reference.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. ***Claims 58-66, 69-74 and 87*** are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a credible asserted utility or a well-established utility.

The reasons why the invention is not supported by either a credible asserted utility or a well established utility are the same as those reached in conclusion of the consideration provided in support of the objection to the specification overleaf.

5. ***Claims 58-66, 69-74 and 87*** are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a

credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. ***Claims 58-61, 66, 69-72 and 87*** are rejected under 35 U.S.C. 102(b) as being anticipated by Browne (WO 96/36969).

Although the device and method by Browne are inoperative Browne does teach the following:.

Browne teaches a method for initiating fusion in a fusionable material (abstract), the method comprising:

introducing fusionable material ("fusion fuel"; see abstract, feature 5 on page 5) into a liquid medium (first line of abstract, and feature 2 on page 5);

determining a location of the fusionable material in said vessel, namely: the focal cavity (see step (iii) in abstract);

directing an acoustic pulse towards the fusionable material such that said acoustic pulse converges on the fusionable material (step (ii) as described in the abstract; see also Figure 5 and discussion on page 19). Browne also teaches that said acoustic pulse

sufficiently increases the temperature and pressure thereof to initiate nuclear fusion in the fusionable material (final sentence of abstract).

On claim 59: directing comprises directing said acoustic pulse to a fixed location, i.e., said focal cavity in said vessel (see abstract) and determining said location of the fusionable material comprises determining whether the fusionable material is within pre-determined distance from said fixed location (cf. abstract; see also Figure 5 and discussion on page 19) from said fixed location and further comprises initiating said acoustic pulse when the fusionable material is within said pre-determined distance of said fixed location (loc.cit.).

On claim 60: the method further comprises directing the fusionable material towards said fixed location (see option (ii) discussed on pages 14-15).

On claim 61: directing said acoustic pulse comprises initiating a plurality of independently generated acoustic pulses (see pages 6-7, feature (3), option (ii); also: pages 20-21, section 4, feature (i)) timed to produce a converging acoustic pulse that converges on said location of the fusionable material (loc.cit.).

On claim 66: determining said location of the fusionable material comprises determining a first location for the fusionable material and using said first location to predict a future location of the fusionable material (Figure 5, page 19).

On claim 69: the method by Browne further comprises containing the fusionable material in a micro-balloon (option (ii) discussed on page 15).

On claims 70-71: the method by Browne further comprises generating said acoustic pulse causing a plurality of pistons to strike the liquid filled vessel by accelerating said

pistons from an initial position peripherally spaced apart from said liquid filled vessel (see pages 8-9, (ii)), while controlling said pistons such that said acoustic pulse converges to a desired location in said liquid filled vessel (evidently, because said acoustic pulse launches a shock wave that hits the fusionable material).

On claim 72: the method further comprises causing energy remaining in said acoustic pulse after the nuclear fusion has been initiated to at least partially return said pistons to said initial position (see Figure 2c and discussion on pages 16-17: due to "delay medium" L with specific reflection and transmission coefficients, thus inherently causing an infinite sequence of acoustic pulses with fixed time separation between subsequent acoustic pulses to be generated in addition to an infinite sequence of reflected acoustic pulses also equidistantly separated in time to reach the pistons).

On claim 87: the method of directing said acoustic pulse comprises initiating a plurality of independently generated acoustic pulses (page 9, second paragraph) and further comprising controlling the amplitude of said independently generated pulses to produce an acoustic pulse that converges on said location of the fusionable material (loc.cit.).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. ***Claims 62-65*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne as applied to claim 58, in view of Pless (5,968,323) (see IDS).

As detailed above, Browne anticipates claim 58. Browne does not necessarily anticipate the further limitations defined by claim 62. However, it would have been obvious to include said further limitations in view of Pless, who, in a patent on a method of creating high pressure and / or high temperature conditions in a cavity within a liquid medium (title, abstract), hence analogous art, teach to introduce the target material through capillary tubes 62 at valve 152 at a lower end of the vessel (Figure 1 and col. 5, l. 21) through which said fuel will rise under hydrostatic forces (col. 5, l. 60-67 and Figure 1). *Motivation* to include the teaching by Pless derives from the ease with which said target material, i.e., fusionable material in the case of Browne, can be moved to the center of the vessel so as to be subjected to converging shock waves.

On claim 63: The method of Pless further implies (loc.cit.) teaches directing said acoustic pulse towards the target when said target is proximate the center 22 of the vessel (loc.cit.) so as to effect said subjecting to converging shock waves.

On claim 64: as an inherent consequence of the motion of the fusionable material towards the center a compensating movement in the liquid medium must take place, because the motion to bring the fusionable material towards the center takes places within said liquid medium (loc.cit. and Figure 1), and:

On claim 65: because said flow is in direct response to a movement of said fusionable material towards the center 22 the response in the flow of liquid necessarily

exhibits the same symmetry, i.e., said flow is aligned with the direction of the hydrostatic forces that cause the fusionable material to move towards center 22 from valve 152.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Flynn (4,333,796) (IDS).

Putterman et al (5,659,173) (IDS).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPM
September 25, 2006

Patent Examiner:

Johannes Mondt (Art Unit: 3663)